REMARKS

Applicants have now had an opportunity to carefully consider the Examiner's comments set forth in the Office Action of November 12, 2009. Claims 1-20 remain in this application. Claims 5-10, 13, 15, and 20 are amended herein. Applicants assert that the amendments are for clarification purposes only and do not require any additional search by the Examiner.

Reconsideration of the Application is requested in view of the comments and amendments herein.

I.   The Office Action

Claims 5-10 are objected to under 37 CFR 1.75(a) as failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention.

Claims 13, 15 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claim 20 is rejected under 35 U.S.C. 102(e) as being anticipated by Christiansen et al. (U.S. 2004/0114170).

Claims 1-3, 6, 11 and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christiansen et al. in view of Yomogizawa (JP 09-050354).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christiansen et al. in view of Yomogizawa and further in view of Dimperio et al. (U.S. Patent No. 5,142,667).

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christiansen et al. in view of Yomogizawa and further in view of Yamazaki (U.S. Patent No. 6,785,727).

Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christiansen et al. in view of Yomogizawa and further in view of Wood et al. (U.S. 2004/0243934).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christiansen et al. in view of Yomogizawa and further in view of Barry et al. (U.S. Patent No. 5,859,711).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christiansen et al. in view of Yomogizawa and further in view of Christiansen (U.S. 2004/0196470).

Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Christiansen et al. in view of Yomogizawa and further in view of Cohen et al. (U.S. Patent No. 6,356,355).

II. Claim Objections

Claims 5-10 are objected to as reciting the limitation "a job" in line 2 of the claims after the limitation "a print job" was claimed in line 2 of the parent claim 1. Claims 5-10 have been amended to recite "the print job" in place of "a job."

III. Indefiniteness Rejection

Claims 13, 15, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Particularly, the Examiner asserts that claim 13 recites the limitation "the print devices" in line 2, claim 15 recites "the user selected status" in line 2, and claim 20 recites "the supervisor" in line 6. The Examiner asserts that there is insufficient antecedent basis for each of these limitations. As such, claim 13 has been amended to recite "associated print devices," claim 15 has been amended deleting "the," and claim 20 has been amended to recite "a supervisor." Accordingly, the rejections should be withdrawn.

IV. The Present Application

By way of brief review, the present application is directed to improving the speed and efficiency of printing systems and facilitating control and data flow of a print job to the printing system that will obviate multiple accesses to a storage disk for any single job. The system exploits "chunk" parallelism to facilitate its speed. As coined by Applicants, "chunks" comprise a collection of rasterizable data of at least one page and not more than one job. A virtual disk VDISK is used for temporary storage, both of split chunks and print-ready pages. The VDISK is similar to RAM disk with some specific features designed for performance in the contemplated chunk parallel system.

V. The Subject Claims Patentably Distinguish Over the References of Record

Claim 20 is rejected under 35 U.S.C. 102(e) as being anticipated by Christensen et al. (U.S. Patent Application No. 2004/0114170). Specifically, the Examiner asserts that

Christiansen discloses a method of operating a printing system for parallel processing a job as is presently claimed. Claim 20 has been amended to recite that the job chunks are selectively stored in an intermediate storage virtual disk remote system for data transfer to selected processing nodes, in which the system provides a shared memory interface. Applicant submits that the subject limitation has previously been subject to a search by the Examiner as part of a method for operating a printing system for parallel processing. As such, no new search is necessitated by this amendment and thus it should be entered after final.

Applicants respectfully traverse the rejection and assert that Christiansen is not at all concerned with an intermediary virtual disk transfer system as is presently claimed. Christiansen merely states that communication is conducted via the "local interface" which may be a data bus or an appropriate network. (See paragraphs 28, 32 and 35). Transfers occur directly between the local memories of the RIP manager and the RIP engines. Accordingly, the rejection of claim 20 should be withdrawn.

Claims 1-3, 6, 11 and 13-17 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Christiansen et al. in view of Yomogizawa (JP Patent No. 09-050354). Specifically, the Examiner asserts that Christiansen teaches the claimed method of operating a printing system for parallel processing a print job, except for the limitation that processing nodes communicate with a virtual disk remote transfer system implemented by providing a shared memory interface. The Examiner therefore cites Yomogizawa as teaching this limitation, and asserts that Christiansen and Yomogizawa are combinable because they are from the same field of endeavor. According to the Examiner, Yomogizawa suggests providing a spool device for the received print data so long as the remote printers in the network has space whenever there becomes limited space in one local printer's spooler. Applicants respectfully traverse.

Particularly, Applicant submits that Yomogizawa fails to teach or suggest a virtual disk remote transfer system that comprises an intermediary storage for data transfer that is implemented by providing a shared memory interface. Rather, Yomogizawa teaches a method for providing a print data spool device, such that when a first printer is unable to store all the print data received from a generation device in its own spool memory, the data is transferred to another printer and virtually spooled in the spool memory of the second printer. The first printer then monitors the spool memory of the first printer and calls the print data back once space opens up. As such, Yomogizawa teaches one spool memory for the first printer and a separate spool

memory for the second printer, not a shared memory interface as is presently claimed. The Examiner submits that Yomogizawa teaches that the memory is shared among a plurality of processing nodes; however, Yomogizawa explicitly teaches of a destination selection means that chooses whether data should be transmitted to an external storage or other devices that can accumulate print data. (See Translation, paragraph [0011]). A free space inspection means then investigates whether the original device has any free space open up, and if so, calls back print data from the other device.

The VDISK of the subject application acts as intermediary storage for data transfer to selected processing nodes that include RAM a physical disk. The Examiner asserts that Yomogizawa teaches the step of monitoring available space in the virtual disk transfer system including detecting a data overflow in the RAM and storing new data in the physical disk until data storage in the RAM is available. Applicant submits that the Examiner appears to have misunderstood the claimed invention. The claimed invention teaches that the VDISCK has a monitoring component for determining when storage space in the RAM becomes available. As submitted above, Yomogizawa fails to teach a virtual disk transfer system as is presently claimed. Rather, Yomogizawa teaches of transferring data to the memory components of other devices to "hold" until space opens up in the desired device's memory. Yomogizawa does not teach of a <u>shared interface</u> that is <u>detached from any particular machine</u>, as is presently claimed. As such, although Yogogizawa does teach a free space inspection means, this inspection is specific to a particular printer, and is not part of a VDISK as presently claimed.

For at least the aforementioned reasons, Applicant submits that independent claims 1, 16, and 20 (along with claims 2-15 and 17-19 that respectively depend therefrom) patentably distinguish over the references of record. As such, withdrawal of the rejections and allowance of the claims are earnestly solicited.

CONCLUSION

For the reasons detailed above, it is submitted all remaining claims (Claims 1-20) are now in condition for allowance. The foregoing comments do not require unnecessary additional search or examination.

☒ Remaining Claims, as delineated below:

(1) FOR	(2) CLAIMS REMAINING AFTER AMENDMENT LESS HIGHEST NUMBER PREVIOUSLY PAID FOR		(3) NUMBER EXTRA
TOTAL CLAIMS	20	- 20 =	0
INDEPENDENT CLAIMS	20	- 3 =	0

☒ This is an authorization under 37 CFR 1.136(a)(3) to treat any concurrent or future reply, requiring a petition for extension of time, as incorporating a petition for the appropriate extension of time.

☒ The Commissioner is hereby authorized to charge any filing or prosecution fees which may be required, under 37 CFR 1.16, 1.17, and 1.21 (but not 1.18), or to credit any overpayment, to Deposit Account 24-0037.

In the event the Examiner considers personal contact advantageous to the disposition of this case, he/she is hereby authorized to contact the undersigned, at Telephone Number (216) 363-9000.

Respectfully submitted,

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2/12/2010
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